**REMARKS**

Claims 1-4, 6-9 and 11-16 were rejected as obvious over Wigstom et al. (20040181343), and claims 5, 10 and 17-20 were rejected as obvious over Wigstrom et al. further modified in view of Knapp et al. (6,444,461). For the following reasons, it is respectfully submitted that these rejections were in error.

In the invention of the present application, a first species (e.g., a "target"), which is attached to a support in at least one defined area, is contacted with a liquid containing a second species (e.g., a "ligand") such that a detectable interaction is enabled. During a detection stage, the amount of ligand-containing liquid which is in contact with a defined area is temporarily reduced.

According to the specification, temporary reduction of the amount of ligand-containing liquid reduces the amount of unbound ligand present in the detection area and thereby improves the resolution of the detected signal. Such temporary reduction of the amount of ligand-containing liquid also avoids the necessity of a wash step.

Wigstrom et al. fails to disclose or suggest a mechanism adapted for temporarily reducing the amount of liquid contacting a detection zone during detection.

Rather, Wigstrom et al. discloses a microfluidic device which is used to sequentially subject a cell, or part of a cell, to a plurality of fluids in order to assess cellular response to

those fluids. According to Wigstrom et al., a microfluidic device comprises microchannels for directing flow of various fluids to a measurement chamber, so as to subject a cell that is maintained in the measurement chamber to each of the fluid flows. (E.g., paragraph [81]). For example, with reference to Figure 10F of Wigstrom et al., three different liquids L1, L2 and L3 are pumped into a measurement chamber along with a buffer feed (B) that separates each of the liquid streams. A cell under study is maintained at the outlet of the microchannels by a micropositioner, such as a pipette or optical tweezer. The cell is scanned through each liquid stream by moving the microfluidic device, the micropositioner or both.

Contrary to the presently claimed invention, Wigstrom et al. does not provide any step or mechanism for reducing the amount of liquid present in the detection area during detection.

Notably, Wigstrom et al. disclose various methods for controlling liquid flow through the microchannels of the microfluidic device to the measurement chamber, but fail to disclose a method for temporarily reducing the amount of fluid present in the measurement chamber during detection. For example, Wigstrom et al. disclose that liquid flow in the microchannels can be accomplished by applying positive and/or negative pressure, by varying the dimensions of individual microchannels, or by using internal or external valves. (See paragraphs 0111-0123). While these methods of Wigstrom et al.

apparently facilitate the selective pumping of liquid through each of the microchannels to a measurement chamber, they do not temporarily reduce the amount of fluid in the measurement chamber during detection.

The Examiner relies upon paragraph [89] of Wigstrom et al. for the proposition that the disclosed substrate can be tilted. However, as that paragraph in Wigstrom et al. specifies, the disclosed tilting is designed to facilitate the above-described scanning of a cell relative to each liquid stream emerging from the microchannels of a microfluidic device. That is, Wigstrom et al. disclose in paragraph [89] that the cell and/or the microfluidic device can be moved, rotated and tilted as needed to sequentially position the cell within each liquid stream. Such relative positioning of the cell and multiple liquid streams would not affect the amount of liquid emerging from the microchannels, would not affect the amount of liquid present in the measurement area during detection, and would not cause the presently claimed reduction of liquid present over the defined area during detection.

The secondary reference to Knapp et al. also discloses a microfluidic device in which various microchannels deliver liquids to measurement chambers, and also fails to disclose any mechanism or step for temporarily reducing the amount of fluid present in the measurement chamber during detection. Thus, even if Knapp et al. were combined with Wigstrom et al. in the manner described in

the Official Action, the combined disclosures would still fail to disclose every recitation of the instant claims.

In view of the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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